

ABSTRACT OF THE DISCLOSURE

The systems basically comprise a delivery system for accessing the targeted tissue within the living being and introduction of at least one agent at select locations in the into the myocardium and other select tissues. The delivery systems are arranged to access the tissues of the heart. One or more of the systems can be utilized during transluminal, transthoracic and direct surgical access procedures. Where appropriate, for example in the case of intraventricular access, portions of the system are steerable to properly orient the device. The instruments may pierce the heart tissue and create channels extending from the endocardium, the epicardium, or the cardiac vessels. When tissue penetration is utilized, the device may include a feature to control the depth of penetration. To minimize bleeding through the channels the device can dilate small initial punctures that later contract down after device removal. When the formation of channels is required, this can be achieved, by way of example, with a rotary-tipped device, pressurized fluid jet devices, vibratory instruments and piercing needle-like tip devices. The system may utilize some form of mechanical action or application of energy (e.g. electrical, sonic, thermal, optical, pressurized fluid, radio frequency (RF), nuclear) in the process. The mechanical action or energy application may affect the surroundings tissues at a distance from the device. The agent delivered to the tissue may include one or more of pharmaceuticals, biologically active agents, radiopaque materials, etc.